

**REMARKS**

This Application has been carefully reviewed in light of the Office Action mailed February 26, 2004 (the "Office Action"). The Office Action rejects Claims 1-16. In order to advance prosecution of this Application, Applicant amends Claims 1, 5 and 9. Applicant respectfully requests reconsideration and favorable action in this case.

**Information Disclosure Statement**

As described in a "Request for Consideration of an Information Disclosure Statement Timely Filed" that was filed by Applicant on September 22, 2004, the Examiner has not yet indicated that the references included in the Information Disclosure Statement filed by Applicant on March 29, 2004 have been considered. Applicant respectfully requests that the Examiner consider these references and indicate such consideration on the PTO-1449 form that accompanied this Information Disclosure Statement (and that was also included with the recently-filed Request for Consideration).

**Section 103 Rejections - Claims 1-12**

The Office Action rejects Claims 1-3, 5-7 and 9-11 under 35 U.S.C. § 103(a) as being unpatentable over Japan Pat. No. 2000-059300 A issued to Hideki Nishizawa ("*Nishizawa*") in view of U.S. Patent No. 6,559,996 issued to Miyamoto et al. ("*Miyamoto*"). The Office Action rejects Claims 4, 8 and 12 under 35 U.S.C. § 103(a) as being unpatentable over *Nishizawa* in view of *Miyamoto* and in further view of U.S. Patent No. 6,618,352 issued to Shirakara et al. ("*Shirakara*"). Applicant respectfully traverses these rejections for the reasons discussed below.

Claim 1 recites converting the non-intensity modulation for the data signal to intensity modulation for the data signal "after the recovering the clock signal based on the intensity modulation of the multimodulated optical information signal." Claim 5 recites a similar element. Claim 9 recites a clock recovery element operable to recover a clock signal based on the intensity modulation of the multimodulated optical information signal and a data recovery element operable to recover the data signal from the non-intensity modulation of the multimodulated optical information signal based on the clock signal, "wherein the multimodulated optical

information signal is provided to the clock recovery element at a point prior to the data recovery element."

The Examiner contends that *Nishizawa* discloses "means (16) for recovering the clock signal based on the intensity modulation of the multimodulated optical information signal." Office Action, page 2. More specifically, *Nishizawa* discloses a narrow band filter 16 that extracts a clock frequency component based on a signal transmitted from interferometer 13. *See Nishizawa*, page 7 and Figure 1. Thus, the optical signal in *Nishizawa* is transmitted to an interferometer (13) and not into a clock recovery means. *See id.* Clock frequency components are extracted from the electrical signals converted by receiver 14 at a point *after* the optical signal is transmitted to the interferometer. *See id.* Therefore, *Nishizawa* does not disclose, teach or suggest converting the non-intensity modulation for the data signal to intensity modulation for the data signal after the recovering the clock signal based on the intensity modulation of the multimodulated optical information signal or providing a multimodulated optical information signal to a clock recovery element at a point prior to a data recovery element.

In addition, the references cited by the Office Action in the rejections of Claim 1, 5 and 9 teach away from each other and would not be operable if combined as proposed. In response to Applicant's previous arguments that *Miyamoto* teaches away from a possible combination with *Nishizawa* because *Nishizawa* specifically deals with NRZ code and components while the object of *Miyamoto* is to output an RZ code, the Examiner states that "the features upon which applicant relies (i.e., Return-zero and/or Non-return-zero) are not recited in the rejected claim(s)" and "[a]lthough the claims are interpreted in light of the specification, limitations from the specification are not read into the claims." Office Action, page 9. However, Applicant is not arguing that any disclosure from the specification be read into the claims if those limitations are not already present in the claims. The analysis of whether two references teach away from each other such that they cannot be properly combined is irrelevant to the claims against which the references are being asserted. The Examiner states that *Nishizawa* "teaches RZ codes" and "[t]herefore it [does] not teach away." *Id.* However, in actuality *Nishizawa* merely mentions that the signal wave of the interferometer turns into a wave almost equivalent to an RZ signal.

*Nishizawa* includes an NRZ-I encoder 12 that inputs an input signal of an NRZ code to output an NRZI code. *See Nishizawa*, page 6 and Figure 1. In contrast, *Miyamoto* states that it is an object of the invention to output an RZ signal. *See, e.g., Miyamoto*, Abstract, and col. 3, lines 58-60.

In addition, the Examiner failed to respond to Applicant's argument that the Examiner is improperly using the Applicant's disclosure as a blueprint for piecing together various elements of *Nishizawa* and *Miyamoto*. The Office Action suggests that motivation for the combination includes the synchronous communication of the clock signal and the optical signal between transceiver and receiver. *See Office Action*, page 3. The portion of *Miyamoto* cited in the Office Action relating to no inter-symbol interference occurring under multi-path fading condition due to polarization dispersion in a transmission line (*Miyamoto*, col. 14, lines 33-39) has nothing to do with the use by one skilled in the art of a clock signal modulated with intensity modulation in combination with the differential phase shift keying direct detection system of *Nishizawa*. There is no motivation to combine the teachings of *Nishizawa* and *Miyamoto*.

Therefore, Applicant respectfully submits that Claims 1, 5 and 9 are patentable over the cited art used in the rejections and request that the rejections of Claims 1, 5 and 9 be withdrawn.

Claims 2-4, 6-8 and 10-12 depend from Claims 1, 5 and 9, respectively, and therefore respectfully include each element of Claims 1, 5 and 9. Applicant thus respectfully requests that the rejections of Claims 2-4, 6-8 and 10-12 be withdrawn because, as discussed above, Claims 1, 5 and 9 are patentable over the cited art used in the rejections.

### **Section 103 Rejections - Claims 13-16**

The Office Action rejects Claims 13-15 under 35 U.S.C. § 103(a) as being unpatentable over Japan *Nishizawa* in view of *Miyamoto* and in further view of U.S. Patent No. 6,559,996 issued to Yano ("*Yano*"). The Office Action rejects Claim 16 under 35 U.S.C. § 103(a) as being unpatentable over *Nishizawa* in view of *Miyamoto* in further view *Yano* and in further view of *Shirakara*. Applicant respectfully traverses these rejections for the reasons discussed below.

Claim 16 recites converting the non-intensity modulation for the data signal to intensity modulation for the data signal "after recovering the clock signal." The Office Action contends that *Yano* "shows the converting the data signal to intensity modulation after recovering the clock signal." Office Action, page 6. The Office Action then suggests that it would have been obvious to combine "converting the non-intensity modulation for the data signal to intensity modulation for the data signal after recovering the clock signal as taught by *Yano*" with the teachings of *Miyamoto* and *Nishizawa*. Office Action, page 7. Applicants respectfully disagree. As discussed above with respect to the rejections of Claims 1, 5 and 9, *Nishizawa* and *Miyamoto* teach away from each other, and no motivation exists to combine the two references.

In addition, *Yano* does not teach "converting the non-intensity modulation for the data signal to intensity modulation for the data signal after recovering the clock signal" as suggested by the Office Action at page 7. *Yano* discloses branching a received data pulse stream and leading one part to an optical clock extraction step and another part to an optical/optical intensity modulator. See *Yano*, col. 2, lines 13-16. In one embodiment, while the clock pulse stream drives the intensity modulator, the data pulse stream is modulated through the intensity modulator; and in another embodiment, while the data pulse stream drives the intensity modulator, the clock pulse stream is modulated through the intensity modulator. See *id.*, col. 2, lines 17-23 and Figures 3-4. The Office Action attempts to utilize portions of *Yano* that teach clock extraction prior to intensity modulation. However, the claim element at issue recites converting non-intensity modulation to intensity modulation after recovering a clock signal. *Yano* merely discloses intensity modulation and does not disclose converting non-intensity modulation to intensity modulation after recovering a clock signal.

In addition, *Yano* specifically teaches away from a combination with *Nishizawa* and *Miyamoto*. For example, *Nishizawa* requires a balance mold electric eye 13 that changes a received optical signal into an electrical signal. See *Nishizawa*, page 7. The electrical signal is then used at the narrow band filter 16, the limiter amplifier 17 and the discrimination decision circuit 18. See *id.* In other words, for *Nishizawa* to work for its intended purpose then it must convert the received light signal into an electrical signal. In contrast, *Yano* states that an object

of the invention disclosed therein "is to provide a simple and inexpensive all-optical regenerative repeater with a high operating speed." *Yano*, col. 1, lines 65-67 (*emphasis added*). Thus, the object of *Yano* specifically excludes the use of electric components and the manipulation of an electric signal. For at least this reason, *Yano* teaches away from a combination with *Nishizawa* and *Miyamoto*.

Furthermore, in contending that one having ordinary skill in the art would have been motivated to combine *Yano* with *Nishizawa* and *Miyamoto*, the Office Action states that "by recovering the clock signal before modulating step, there is a small extinction ratio can be used to remove distortion or jitter in the signal (*Yano*, col. 2, lines 24-28)." Office Action, page 7. However, the cited portion is merely directed to an advantage of the first configuration (Figure 3) over the second configuration (Figure 4) in that an optical / optical intensity modulator with a small extinction ratio can be used in the first configuration. *See Yano*, col. 2, lines 24-28. This advantage has nothing to do with recovering a clock signal before a modulating step, particularly since the Office Action even contends that the clock signal is recovered before the modulating step in both cited configurations of *Yano* (Figures 3 and 4). Thus, for at least this reason, the Office Action has failed to cite a proper motivation to combine *Yano* with *Nishizawa* and *Miyamoto*.

Therefore, since *Yano* does not disclose, teach or suggest converting non-intensity modulation to intensity modulation after recovering a clock signal and specifically teaches away from a combination with *Nishizawa* and *Miyamoto* and because the Office Action as failed to cite a proper motivation to combine *Yano* with *Nishizawa* and *Miyamoto*, Applicant respectfully submits that Claim 13 is patentable over the cited art used in the rejections and requests that the rejection of Claim 13 be withdrawn.

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Claims 14-16 depend from Claim 13 and therefore include each element of Claim 13. Applicant thus respectfully requests that the rejections of Claims 14-16 be withdrawn because, as discussed above, Claim 16 is patentable over the cited art used in the rejections.

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**CONCLUSION**

Applicant has made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicant respectfully requests full allowance of all pending claims.

If the present application is not allowed and/or if one or more of the rejections is maintained, Applicant hereby requests a telephone conference with the Examiner and further request that the Examiner contact Chad C. Walters, Attorney for Applicant, at the Examiner's convenience at (214) 953-6511 to schedule the telephone conference.

Applicant believes no fees are due. However, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P.

Attorneys for Applicant



Chad C. Walters

Reg. No. 48,022

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**Correspondence Address:**  
Baker Botts L.L.P.  
2001 Ross Avenue, Suite 600  
Dallas, Texas 75201-2980

**Customer Number**                      **05073**